

Claims

1. A compound or agent for modulating CTGF-mediated cell adhesion.
2. A compound or agent for modulating binding of CTGF to a cell.
3. The compound or agent of claim 1, wherein the CTGF is directly adsorbed to the substrate.
4. The compound or agent of claim 1, wherein the CTGF is bound to a monoclonal antibody specific for a CTGF.
5. The compound of claim 4, wherein the antibody binds to an epitope contained within a region of human CTGF from amino acid 1 to 247 or to an orthologous region of a CTGF from another species, and wherein the antibody is adsorbed to the substrate.
6. The compound or agent of any one of claims 1 to 5, wherein CTGF is selected from the group consisting of endogenous CTGF, recombinant CTGF, and fragments of CTGF.
7. The compound or agent of claim 6, wherein the fragments of CTGF comprise at least amino acid 247 to 349 of human CTGF or an orthologous region of a CTGF from another species.
8. The compound or agent of any one of claims 1 to 7, wherein the cell is selected from the group consisting of a fibroblast, an endothelial cell, and an osteosarcoma cell.
9. The compound or agent of any one of claims 1 to 8, wherein the compound or agent is a sulfated polysaccharide.
10. The compound or agent of claim 9, wherein the polysaccharide comprises at least 10 saccharide subunits.
11. The compound or agent of claim 9, wherein the polysaccharide comprises about 10 to 50 saccharide subunits.
12. The compound or agent of any one of claims 9 to 11, wherein the polysaccharide comprises a repeating disaccharide, wherein one saccharide substituent is selected from the group consisting of N-galactosamine and N-glucosamine, and the other saccharide substituent is selected from the group consisting of iduronate, glucuronate, and galactose.
13. The compound or agent of claim 12, wherein the polysaccharide is selected from the group consisting of dermatan, chondroitin, and heparan.

14. The compound or agent of any one of claims 9 to 13, wherein the polysaccharide contains at least 1.5 sulfate groups per disaccharide.
15. The compound or agent of any one of claims 9 to 13, wherein the polysaccharide contains at least 2.0 sulfate groups per disaccharide.
16. The compound or agent of any one of claims 9 to 13, wherein the polysaccharide contains about 2.0 to 3.5 sulfate groups per disaccharide.
17. Use of a compound or agent of any one of claims 1 to 16 to modulate CTGF-mediated cell adhesion in a subject.
18. Use of a compound or agent of any one of claims 1 to 16 to modulate binding of CTGF to a cell in a subject.
19. The use of claim 17 or 18, wherein the subject is selected from a cell, a tissue, and an organ, and the use is performed *ex vivo*.
20. The use of claim 17 or 18, wherein the subject is a mammal.
21. The use of any one of claims 17, 18, and 20, wherein the subject is a human.
22. The use of any one of claims 17, 18, 20, and 21, wherein the subject has or is at risk for having a CTGF-associated condition or disorder.
23. The use of claim 22, wherein the CTGF-associated condition or disorder is selected from the group consisting of fibrosis, metaplasia, and cancer.
24. The use of claim 22, wherein the CTGF-associated condition or disorder is idiopathic pulmonary fibrosis.
25. The use of claim 22, wherein the CTGF-associated condition or disorder is diabetic nephropathy.
26. A method for identifying compounds or agents that modulate CTGF-mediated cell adhesion, the method comprising:
 - a) adsorbing a monoclonal antibody specific for CTGF to a first and second substrate;
 - b) binding CTGF to the antibody on the first and second substrate;
 - c) adding cells to the first substrate under suitable conditions for cells to adhere to CTGF;

- d) adding a compound or agent and cells to the second substrate under suitable conditions for cells to adhere to CTGF; and
 - e) comparing the number of cells adhered to CTGF on the first substrate and the number of cells adhered to CTGF on the second substrate, wherein a difference between the number of cells adhered to the first substrate compared to the second substrate is indicative of a compound or agent that modulates CTGF-mediated adhesion.
27. The method of claim 26, wherein the monoclonal antibody binds to a CTGF epitope contained within a region of human CTGF from amino acid 1 to 247 or to an orthologous region of a CTGF from another species, and wherein the antibody is adsorbed to the substrate.
28. A method for identifying compounds or agents that modulate binding of CTGF to a cell, the method comprising:
- a) culturing cells capable of producing endogenous CTGF in the presence of a compound or agent for a suitable period of time;
 - b) measuring the level of CTGF in the culture medium; and
 - c) comparing the amount of CTGF in the culture medium to the amount of CTGF in culture medium from cells cultured in the absence of compound for an identical period of time, wherein a difference between the amount of CTGF in culture media in the presence of compound or agent relative to in the absence of compound or agent is indicative of a compound or agent that modulates binding of CTGF to a cell.
29. The method of any one of claims 26 to 28, wherein the cell is selected from the group consisting of a fibroblast, an endothelial cell, and an osteosarcoma cell.
30. A method for identifying compounds or agents that modulate interaction between CTGF and an HSPG, the method comprising:
- a) incubating CTGF and the HSPG in the presence of a compound or agent under conditions suitable for interaction between CTGF and the HSPG;
 - b) measuring the amount of HSPG interacting with CTGF; and
 - c) comparing the amount of HSPG interacting with CTGF in the presence of compound to the amount of HSPG interacting with CTGF in the absence of compound, wherein a difference between the amount of HSPG interacting with CTGF in the presence of compound or agent relative to in the absence of compound or agent is indicative of a compound or agent that modulates interaction between CTGF and the HSPG.
31. The method of any one of claims 26 to 30, wherein CTGF is selected from the group consisting of endogenous CTGF, recombinant CTGF, and fragments of CTGF.

32. The method of claim 31, wherein the fragments of CTGF comprise at least amino acid 247 to 349 of human CTGF or an orthologous region of a CTGF from another species.
33. The method of claim 30 or any of claims 31 and 32 in part, wherein the HSPG is selected from the group consisting of betaglycan and LDL receptor-related protein (LRP).